



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,750	04/02/2004	Ricky Dean Madson	16571-US	1145
30689	7590	05/16/2007		
DEERE & COMPANY ONE JOHN DEERE PLACE MOLINE, IL 61265			EXAMINER VANAMAN, FRANK BENNETT	
			ART UNIT 3618	PAPER NUMBER
			MAIL DATE 05/16/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/816,750

Applicant(s)

MADSON ET AL.

Examiner

Frank Vanaman

Art Unit

3618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) 39 and 46-65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16, 17, 20-24, 26-36, 38, 40 and 43-45 is/are rejected.
- 7) ☒ Claim(s) 15, 18, 19, 25, 37, 41, 42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Status of Application

1. Applicant's request for reconsideration, filed Feb. 28, 2007, has been entered in the application. Claims 1-65 remain pending, claims 39 and 46-65 are withdrawn from consideration.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-6, 20, 21, 27, 32, 33, 44 and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Emond et al. (US 5,590,624). Emond et al. teach a vehicle cooling package including a heat exchanger assembly (52, 54) fluidly connected with an engine portion of the vehicle in order to operate, a unitary fan shroud (56) mounted adjacent the heat exchanger and connected thereto (note bracket, figure 2); the shroud having a diverting surface (62), a diverter plate (46) with a central aperture (88; additionally 55) mounted adjacent the fan shroud and spaced therefrom, having at least one flange (bottom side of 90) extending in a perpendicular direction to the general plane of the forward extent of the diverter, a fan (48, 65) mounted for rotation between the shroud and plate; a vehicle hood (22, 24) enclosing the assembly; having air discharge openings including diffuser screen or grid portions (32) extending along at least the top, and further including sides extending closely proximate a lower end of the space between the plate and shroud (note figure 1), the lower section of the grid portions (32) positioned closely proximate a front hood support (e.g., 34) to the breadth claimed; the fan shroud diverting surface having an angle (compare 62 and flow indicating angle) which closely matches the discharge direction of the fan element (48, 65; also note col. 3, lines 46-55), the diverter plate comprising an angle corresponding closely to the discharge of the fan (48, 65); the air being discharged at a comparatively high velocity compared with a discharge arrangement not including the fan portions, shroud and diverter plate; the shroud having an aperture defined by a circumferential wall (58) which extends out from a main portion (60), the diverting surface (62) extending in an opposing direction therefrom; the components being mounted to a vehicle frame (not referenced, shown proximate numerals 58, 60, 62, figure 2);

Art Unit: 3618

4. Claims 27, 29 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Albright et al. (US 2003/0136544). Albright et al. teach a fan shroud having a main body portion (66, 69, distal end 69A), with a fan aperture therein (62), which is defined by a circumferential wall (68A) extending outwardly from the shroud body, further including a diverting surface extending from the circumferential wall (e.g., proximate end 68A at the opposing end of the body from distal end 69A), at an angle compared to the fan axis (note figure 9), having a section (e.g., between 68A and 69) corresponding to the fan discharge; and further including at least one mounting flange (69B - note col. 3, lines 66, 67), the corners of the shroud including recess portions (e.g., proximate the arrow end of the lead line for element 50, figure 3; additionally note figure 7) which accommodate plumbing portions (inlet and outlet lines of radiator 48).

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 8, 10, 14, 16, 17, 23, 24, 36, 38 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Emond et al. (Cited above).

Claim 8: The reference to Emond et al. is discussed above and fails to teach the shroud as being molded from a thermoplastic or thermoset material. The molding of vehicle ducts and diverters from thermoplastic or thermoset materials is old and well known, for the purpose of providing inexpensive molded objects of comparatively high strength and low weight, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the shroud from a molded thermoplastic or thermoset for the purpose of inexpensively providing the shroud without substantially increasing the weight of the vehicle.

Claims 10, 17, 40: The reference to Emond et al. is discussed above and fails to teach the portions of the shroud and/or diverter plate having stiffening ribs. Stiffening ribs on structural items are notoriously old and well known, being provided for the advantage of increasing stiffness while not appreciably increasing weight, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide stiffening ribs on the shroud portion and/or plate portion, for the purpose of rendering

Art Unit: 3618

either or both elements more rigid without substantially increasing their respective weights.

Claims 14, 36: While teaching at least one perpendicular flange, the reference to Emond et al. fails to teach a pair thereof. The duplication of already-taught parts is old and well known, for the purpose of amplifying or enhancing the effect of the existing part, and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide at least a pair of perpendicular flanges instead of the single shown flange of Emond et al. for the purpose of providing greater surface area for mounting, or for rigidifying the edges of the plate.

Claims 16, 38: The reference to Emond et al. fails to specifically teach plumbing recesses in the plate, however in view of at least one plumbing element traversing the plate (note figure 2, upper portion thereof), it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a recess or aperture in the plate so as to allow the plumbing element to pass through the plate.

Claim 23: The reference to Emond et al. fails to teach the specific angle of the fan discharge. Inasmuch as Emond et al. do teach that the fan has a discharge with both axial and radial components, and inasmuch as the out flow is intended specifically to be directed towards surfaces generally perpendicular to the axial direction, it would have been obvious to one of ordinary skill in the art at the time of the invention to adjust an angle of discharge of the fan to be at an angle of approximately 60 degrees to 80 degrees for the purpose of directing a substantial portion of the air flow towards the already-taught outputs.

Claim 24: The reference to Emond et al. fails to teach the diverting surface of the shroud and diverter plate as extending completely to the hood portion. In that Emond et al. are specifically focused on the control of flow through the heat exchangers and specific draw of flow through the engine (e.g., through 55), it would have been obvious to one of ordinary skill in the art at the time of the invention to prevent flow through portions of the various compartments except where taught (i.e., through the fan shroud, through the apertures 55) for the purpose of precisely controlling the flow through the assembly, and as such, it would have been obvious to one of ordinary skill in the art at

the time of the invention to extend the non-flow-inducing portions of the shroud and diverter plates to the hood structure, thus promoting flow only through the taught apertures, allowing precise control over the flow.

7. Claims 7, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Emond et al. in view of Hitt et al. (US 6,622,783). The reference to Emond et al. fails to teach the provision of the shroud as mountable to the heat exchanger frame, wherein the heat exchanger extends to be partially disposed within the shroud, the shroud including one or more mounting flanges which mate with portions of the heat exchanger frame, the shroud including plumbing recesses. Hitt et al. teach a fan shroud (12) for use in a vehicle cooling system, the shroud including a plurality of flange portions (38, 44) which mate with a heat exchanger (13) and its frame (20, 50), with at least a portion of the heat exchanger being disposed within the shroud (figures 4, 5); the shroud including plumbing recesses (between 44 and 44, for example). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the shroud of the vehicle system of Emond et al. in the format taught by Hitt et al. to include the mating flanges, plumbing recesses and a portion of the heat exchanger disposed within the shroud, for the purpose of providing a secure connection between heat exchanger and shroud, and to ensure efficient air flow through the exchanger.

8. Claims 12, 13, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Emond et al. in view of Haupt (US 4,018,297). The reference to Emond et al. fails to teach the diverter plate as including a main section and removable section, wherein the sections are provided with mating flanges to facilitate attachment to one another. Haupt teaches a shroud/diverter element (6 in general) for use in an automotive cooling arrangement; the element provided with a plurality of sections (10, 12, 15, 16), at least one (10) being removable from the remaining portions (figure 2), the sections including mating flanges (22, 23, figure 4, for example) allowing fasteners (13, 18) to be used to connect the sections together. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the diverter taught by Emond et al. from a plurality of sections as taught by the diverter/shroud of Haupt, for the purpose of allowing the element to be installed/removed without disassembly of the

Art Unit: 3618

remaining portions of the heat exchange assembly, and for allowing easy access to working elements contained behind it

9. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Emond et al. in view of Giolda et al. (US 5,626,185). The reference to Emond et al. fails to teach the provision of wheel well louver discharge vents aligned with the region between the shroud and diverter. Giolda et al. teach a vehicle airflow arrangement including a wheel well louver (37) for allowing heated air to be removed from a heat-exchange and engine compartment area. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the assembly taught by Emond et al. with a wheel well louver arrangement connecting the region between the shroud and diverter to a wheel well, for the purpose of exhausting the heated air and preventing recirculation of already-heated air (specifically taught by Giolda), allowing the vehicle to operate more efficiently.

10. Claims 26 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Emond et al. in view of Yamashita et al. (US 5,689,953). The reference to Emond et al. fails to teach the provision of a port in the diverter for directing fan discharge air to a selected component. Yamashita et al. teach a diverter (e.g., 20) for a fan system in a vehicle heat exchanging arrangement, wherein a flow port (28) is provided in addition to a means of removing the bulk of the heated air from the vehicle compartment (e.g., 20b), the flow port being arranged to direct a portion of the air to an pre-selected component (16) for cooling thereof. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide at least one additional port as taught by Yamashita et al. in the diverter taught by Emond et al., directed to a pre-selected component, for the purpose of providing a smaller quantity of ventilation air to cool at least a portion of the pre-selected component.

11. Claims 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albright et al.

Claim 28: The reference to Albright et al. is discussed above and fails to teach the shroud as being molded from a thermoplastic or thermoset material. The molding of vehicle ducts and diverters from thermoplastic or thermoset materials is old and well

Art Unit: 3618

known, for the purpose of providing inexpensive molded objects of comparatively high strength and low weight, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the shroud from a molded thermoplastic or thermoset for the purpose of inexpensively providing the shroud without substantially increasing the weight of the vehicle.

Claim 30: The reference to Albright et al. is discussed above and fails to teach the portions of the shroud having stiffening ribs. Stiffening ribs on structural items are notoriously old and well known, being provided for the advantage of increasing stiffness while not appreciably increasing weight, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide stiffening ribs on the shroud portion, for the purpose of rendering the shroud more rigid without substantially increasing its weight.

Allowable Subject Matter

12. Claims 15, 18, 19, 25, 37, 41 and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Comments

13. Applicant's comments have been carefully considered. Initially the examiner notes that there is some confusion with the spelling of the first named inventor in the 5,590,624 reference. It is "Emond". The most recent office action mailed November 2006 includes this corrected spelling, although the examiner notes with regret that the first office action mailed June 9, 2006 also mis-spelled the name as "Edmond".

Applicant has argued, with regard to the Emond et al. reference that Emond teaches the barrier 46 as serving to impart a radial component to the fan output. The examiner agrees that this is the case. Applicant continues, however, with the assertion that diffuser 65 is not part of the fan. The examiner initially notes that applicant's claim recitations do not prevent the interpretation set forth in the rejection under 35 USC 102 as regards the element 65 being a part of the fan. Inasmuch as it (1) is rigidly attached to the fan, (2) rotates with the fan, and (3) is explicitly taught to affect the direction of air moved by the assembly, it is not deemed an unreasonable interpretation to consider

Art Unit: 3618

element 65 as being a part of the fan. Further, applicant's claim language only requires that the diverting surface "closely matches" the discharge of the fan absent any further recitation. To the breadth that this limitation is actually recited in the claims, the output of the fan "closely matches" the angle of the diverter. Applicant's claims, lacking any specificity associated with the phrase "closely matches" allow such an interpretation. As regards the reference to Albright, applicant has asserted that the reference does not meet the claims, and then continues with a discussion of the drawings of the instant application, rather than the material actually recited in the claims. As such, it appears as though applicant is attempting to convince the examiner to read unclaimed limitations into the claims, which is not proper in patent prosecution. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

As regards reading unclaimed limitations from the specification into the claims

From MPEP 2111:

"During patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification. *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969) The court explained that "reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from 'reading limitations of the specification into a claim,' to thereby narrow the scope of the claim by implicitly adding disclosed limitations which have no express basis in the claim." The court found that applicant was advocating the latter, i.e., the impermissible importation of subject matter from the specification into the claim.). See also *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). "

Applicant concludes that the main body (i.e., 66, 69, 69A in Albright) is "simply not opposite" the diverting surface (i.e., the surface proximate the wall 68A). The surface is opposite, however to the breadth that the term 'opposite' is actually recited.

Art Unit: 3618

The surface extends at an opposing end from the remainder of the element (e.g., the portion proximate 69A), and indeed extends to a free end (e.g., at 68A) which is oriented in an opposing direction from the other end of the main body (e.g., compare with 69A). Once again, it is the substantial breadth of applicant's claim recitations that allows this interpretation.

Many of the difficulties encountered in the prosecution of patent applications may be alleviated if each applicant includes, at the soonest possible time, claims varying from the broadest to which he or she believes he or she is entitled to the most detailed that he or she is willing to accept.

As regards the claims found to be allowable, the examiner notes that applicant has not placed these claims in independent form despite the response filed being understood to comprise a fully responsive reply as specifically defined in 37 CFR 1.111.

The examiner notes that the remaining art rejections are not treated in a manner which specifically calls out any perceived errors in those rejections. Any amendment and its associated arguments are expected to constitute a full and complete response to the previous office action as is specifically required by 37 CFR 1.111(b). Any arguments omitted are understood to have been consciously omitted by applicant.

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 3618

15. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A response to this action should be mailed to:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450,

Or faxed to:

PTO Central Fax: 571-273-8300

F. VANAMAN
Primary Examiner
Art Unit 3618



5/9/07